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Extubation of patients with neuromuscular weakness: a new management paradigm.

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Abstract

BACKGROUND: Successful **extubation** conventionally necessitates the passing of spontaneous breathing trials (SBTs) and ventilator weaning parameters. We report successful **extubation** of **patients** with **neuromuscular** disease (NMD) and **weakness** who could not pass them.

METHODS: NMD-specific **extubation** criteria and a **new extubation** protocol were developed. Data were collected on 157 consecutive "unweanable" **patients**, including 83 transferred from other hospitals who refused tracheostomies. They could not pass the SBTs before or after **extubation**. Once the pulse oxyhemoglobin saturation (Spo(2)) was maintained at $\geq 95\%$ in ambient air, **patients** were extubated to full noninvasive mechanical ventilation (NIV) support and aggressive mechanically assisted coughing (MAC). Rather than oxygen, NIV and MAC were used to maintain or return the Spo(2) to $\geq 95\%$. **Extubation** success was defined as not requiring reintubation during the hospitalization and was considered as a function of diagnosis, preintubation NIV experience, and vital capacity and assisted cough peak flows (CPF) at **extubation**.

RESULTS: Before hospitalization 96 (61%) **patients** had no experience with NIV, 41 (26%) used it < 24 h per day, and 20 (13%) were continuously NIV dependent. The first-attempt protocol **extubation** success rate was 95% (149 **patients**). All 98 **extubation** attempts on **patients** with assisted CPF ≥ 160 L/m were successful. The dependence on continuous NIV and the duration of dependence prior to intubation correlated with **extubation** success ($P < .005$). Six of eight **patients** who initially failed **extubation** succeeded on subsequent attempts, so only two with no measurable assisted CPF underwent tracheotomy.

CONCLUSIONS: Continuous volume-cycled NIV via oral interfaces and masks and MAC with oximetry feedback in ambient air can permit safe **extubation** of unweanable **patients** with NMD.

Comment in

Extubation of patients with neuromuscular weakness: a routine step or a challenging procedure? [Chest. 2010]

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